REMARKS

Applicant has revised claims 47 and 50, in conformity with the suggestions in the Official Action, so as to overcome the claim objections. (Semicolons have been added in claim 50 after subparagraphs (a) and (b) so as to conform with the other claims in this respect.) The allowance of claims 50-54, and the indication of allowability of claims 27, 28, 45, 48 and 49 is noted with appreciation.

With respect to the rejection of claim 18, Carroll (US# 4,724,427) and Snodgrass et al. (US# 5,365,551) fail to teach the following underlined limitations of the claim 18:

> Claim 18 (previously presented): A method for maintaining information in a Radio Frequency transponder, said information being retained during a period when no power is supplied to said transponder, the method comprising the steps of:
>
> (a) applying power to said transponder from an external field;
>
> (b) after removal of the power applied to said transponder, utilizing stored energy from the applied power to retain the information during the period when no power is applied to said transponder; and
>
> (c) utilizing the retained information to restore the transponder to a state represented by the retained information when the transponder is again subjected to an external field even after a substantial time interval with no power from an external field.

With respect to claim 18, Carroll teaches that circuit 22 generates operating power used by the divide/timing logic 24 and the data generator 30, col. 6, lines 36-39. These circuits are used only during receipt of the interrogation signal 16, and the Carroll circuits are not used "to retain information during the period when no power is applied to said transponder" as required by subparagraph (b) of claim 18. The PROM memory array 80, col. 9, lines 47-52, and 102, col. 11, lines 14-17, are non-volatile memory that does not require voltage from the circuit 22 of Carroll. See, for example, the IEEE Standard Dictionary of Electrical and Electronic Terms, Sixth Edition, IEEE Std 100-1996, pages 877-878, which defines "read-only memory (ROM)" as "(1) - - - The ROM data are maintained across losses of primary and secondary power." The application to Carroll of

an external energizing field again after a substantial time interval as explained in the Official Action at page 4, lines 2-4, does not cause Carroll to be relevant to the underlined limitations of claim 18. With respect to claim 21, Snodgrass does not teach using stored energy from the external field to retain information during the time intervals between such applications of power during a multitag identification operation. Note the reference to a battery at col. 12 of Snodgrass, line 58.

With respect to the rejection of claim 26, Carroll (US# 4,724,427) and Snodgrass et al. (US# 5,365,551) fail to teach the following underlined limitations of the claim 26:

> Claim 26 (previously presented): An RF tag comprising:
>
> (a) a tag antenna for receiving RF power and modulated RF information signals sent to said RF tag by a base station;
>
> (b) a first tag voltage rectification circuit coupled to said tag antenna for receiving said RF power from said tag antenna and for providing power to the electronic components of said RF tag, said electronic components receiving said power only from said first tag voltage rectification circuit;
>
> (c) a main memory;
>
> (d) a volatile auxiliary memory for storing state information in the absence of a received RF power signal; and
>
> (e) an auxiliary power capacitor for storing energy while the antenna is receiving RF power, for energizing said volatile auxiliary memory, where said auxiliary power capacitor retains sufficient energy to power said volatile auxiliary memory so as to retain the stored state information for a substantial period of time of at least one second after said RF power to said RF tag is removed.

With respect to claim 26, the Carroll patent only shows a non-volatile memory 80, 102, and does not show a "volatile auxiliary memory for storing state information in the absence of a received RF power signal", in conjunction with the limitations of subparagraph (e) of claim 26. The divide/timing logic 24 and the data generator 30 of Carroll are only used while power is being received from interrogation signal 16, and do not store state information in the absence of interrogation signal 16 as required by subparagraphs (d) and (e) of claim 26.

Accordingly, for example for the reasons explained in the foregoing discussion with reference to claims 18 and 26, Carroll (US# 4,724,427) and Snodgrass et al. (US# 5,365,551) fail to teach the following underlined limitations of claims 18-26, 29-44 and 46-47:

Claim 18 (previously presented): A method for maintaining information in a Radio Frequency transponder, said information being retained during a period when no power is supplied to said transponder, the method comprising the steps of:

(a) applying power to said transponder from an external field;

(b) after removal of the power applied to said transponder, utilizing stored energy from the applied power to retain the information during the period when no power is applied to said transponder; and

(c) utilizing the retained information to restore the transponder to a state represented by the retained information when the transponder is again subjected to an external field even after a substantial time interval with no power from an external field.

Claim 19 (previously presented): The method of claim 18, wherein the information is retained in an auxiliary volatile storage by the stored energy from the applied power for a substantial time interval of at least one second.

Claim 20 (previously presented): The method of claim 19, wherein the energy required to retain information in the auxiliary volatile storage is stored in an auxiliary charge storage which substantially only supplies energy to said auxiliary volatile storage.

Claim 21 (previously presented): The method of claim 18, wherein power is applied to the transponder at intervals such that the stored energy should remain adequate to retain said information, for the time intervals between successive applications of power, when a multitag identification operation is being carried out including said transponder.

Claim 22 (previously presented): The method of claim 18, wherein the information is stored in an auxiliary volatile storage for a substantial time period after removal of power applied to the transponder, and the stored information is transferred to a different section of the transponder when power is again applied to said transponder, the energy required to retain information in the auxiliary volatile storage being stored in an auxiliary charge storage device which does not supply energy to the different section of the transponder.

Claim 23 (previously presented): The method of claim 18, wherein the energy required to retain information in the auxiliary volatile storage is stored in an auxiliary charge storage which substantially only supplies energy to said auxiliary volatile storage.

Claim 24 (previously presented): The method of claim 18, wherein the information is retained in an auxiliary volatile storage by the stored energy from the applied power for a substantial time interval of at least a plurality of seconds.

Claim 25 (previously presented): The method of claim 24, wherein the information is stored in an auxiliary volatile storage for a substantial time period after removal of power applied to the transponder, and the stored information is transferred to a different section of the transponder when power is again applied to said transponder, the energy required to retain information in the auxiliary volatile storage being stored in an auxiliary charge storage device which does not supply energy to the different section of the transponder.

Claim 26 (previously presented): An RF tag comprising:

(a) a tag antenna for receiving RF power and modulated RF information signals sent to said RF tag by a base station;

(b) a first tag voltage rectification circuit coupled to said tag antenna for receiving said RF power from said tag antenna and for providing power to the electronic components of said RF tag, said electronic components receiving said power only from said first tag voltage rectification circuit;

(c) a main memory;

(d) a volatile auxiliary memory for storing state information in the absence of a received RF power signal; and

(e) an auxiliary power capacitor for storing energy while the antenna is receiving RF power, for energizing said volatile auxiliary memory, where said auxiliary power capacitor retains sufficient energy to power said volatile auxiliary memory so as to retain the stored state information for a substantial period of time of at least one second after said RF power to said RF tag is removed.

Claim 29 (previously presented): A method of effecting a multi-tag identification operation, comprising the steps of:

(a) providing RF energy to a plurality of RF tags disposed in a field region thereof to activate at least one of said plurality of RF tags, wherein at least said one RF tag includes a power storage device, and a volatile information retaining device;

(b) supplying energy to said power storage device, whereby said power storage device can power said volatile information retaining device for a substantial time interval when said one RF tag is de-activated; and

(c) utilizing the power storage device to retain state information comprising information that said one RF tag has been identified.

Claim 30 (previously presented): The method of claim 29, wherein the information is retained in the volatile information retaining device by the stored energy of the power storage device for a time interval of at least one second.

Claim 31 (previously presented): The method of claim 29, wherein the energy required to retain information in said volatile information retaining device is stored in the power storage device which substantially only supplies energy to said volatile information retaining device.

Claim 32 (previously presented): The method of claim 29, wherein power is applied to the transponder at intervals such that the stored energy of the power storage device should remain adequate to retain said information, for the time intervals between successive applications of power, when a multitag identification operation is being carried out including said transponder.

Claim 33 (previously presented): The method of claim 29, wherein the state information is stored in said volatile information retaining device for a substantial time period after removal of power applied to the transponder, and the stored state information is transferred to a different section of the transponder when power is again applied to said transponder, the energy required to retain the state information in said volatile information retaining device being stored in the power storage device which does not supply energy to the different section of the transponder.

Claim 34 (previously presented): The method of claim 29, wherein the energy required to retain the state information in said volatile information retaining device is stored in the power storage device which substantially only supplies energy to said volatile information retaining device.

Claim 35 (previously presented): The method of claim 29, wherein the information is retained in the volatile information retaining device by the power storage device for a substantial time interval of at least a plurality of seconds.

Claim 36 (currently amended): An RF tag comprising:

(a) a tag antenna for receiving RF power and modulated RF information signals sent to said RF tag by a base station;

(b) a tag voltage rectification circuit coupled to said tag antenna for receiving said RF power from said tag antenna and for providing power to the electronic components of said RF tag;

(c) a main memory;

(d) a volatile auxiliary memory for storing state information upon interruption of the received RF power signal;

(e) an auxiliary power capacitor for storing energy while the antenna is receiving RF power, for energizing said volatile auxiliary memory, where said

auxiliary power capacitor retains sufficient energy to power said volatile auxiliary memory so as to retain the stored state information for a substantial period of time after said RF power to said RF tag is removed; and

(f) a circuit for transferring the stored state information from the volatile auxiliary memory to the main memory when RF power is again [[gain]] received by the tag voltage rectification circuit.

Claim 37 (previously presented): The RF tag of claim 36, wherein the auxiliary power capacitor retains sufficient energy to power said volatile auxiliary memory so as to retain the stored state information for a substantial period of time of at least one second after said RF power to said RF tag is removed.

Claim 38 (currently amended): A method of effecting a multitag identification operation, comprising the steps of:

(a) providing RF energy to a field region containing a plurality of RF tags to activate at least one of said plurality of RF tags, wherein at least said one RF tag includes a volatile information retaining device comprising a power storage device; [[,]] and

(b) supplying energy to said power storage device of said one tag during receipt of adequate RF energy to activate said one tag, whereby said volatile information retaining device of said one tag retains information for a substantial time interval even when the supply of said RF energy is present in the field region but is no longer adequate to activate said one tag; and

(c) utilizing the volatile information retaining device to retain information that said one RF tag has been identified during a multitag identification operation.

Claim 39 (previously presented): The method of claim 38, wherein the information is retained in the volatile information retaining device by the stored energy of the power storage device for a time interval of at least one second.

Claim 40 (previously presented): The method of claim 38, wherein the energy required to retain information in said volatile information retaining device is stored in the power storage device which substantially only supplies energy to said volatile information retaining device.

Claim 41(previously presented): The method of claim 38, wherein RF energy is applied to said one tag at intervals during a multitag identification operation such that the stored energy of the power storage device should remain adequate to retain said information during the time that the multitag identification operation is being carried out.

Claim 42 (previously presented): The method of claim 38, wherein state information is stored in said volatile information retaining device for a substantial

time period while adequate RF energy is not being received by said one tag, and the stored state information is transferred to a different section of said one tag when adequate RF energy is again applied to said one tag, the energy required to retain the state information in said volatile information retaining device being stored in the power storage device which does not supply energy to the different section of said one tag.

Claim 43 (previously presented): The method of claim 42, wherein the energy required to retain the state information in said volatile information retaining device is stored in the power storage device which substantially only supplies energy to said volatile information retaining device.

Claim 44 (previously presented): The method of claim 38, wherein the information is retained in the volatile information retaining device by the power storage device for a substantial time interval of one second or so.

Claim 46 (previously presented): The method of claim 38, wherein the information is retained in the volatile information retaining device by the power storage device for a substantial time interval of a plurality of seconds.

Claim 47 (currently amended): The method of claim 38, wherein the supplying of RF energy to said field region changes a characteristic of such RF energy during the multitag identification operation such that adequate RF energy to activate said one tag, is only available at intervals when RF energy of a given characteristic is being supplied, whereby said volatile information retaining device of said one tag retains information for a substantial time interval even when the supply of said RF energy is present in the field region but is not of a characteristic to adequately activate said one tag. [[;]]

GENERAL AUTHORIZATION UNDER 37 CFR 1.136(a)(3)

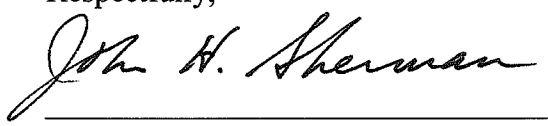
The Patent and Trademark Office is hereby authorized to treat this or any future paper, requiring a petition for an extension of time, as incorporating a petition for extension of time for the appropriate length of time.

The Patent and Trademark Office is hereby authorized to charge fees under 37 CFR 1.16 and 1.17, and any fees necessitated by this response, to Deposit Account 09-0471.

Conclusion

A favorable action on each of the claims as now presented is respectfully solicited.

Respectfully,



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